

Application No.: 10/674,250
Amendment dated: 03/08/05
Reply to Office Action mailed: 12/17/04

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (canceled)
2. (currently amended) The method of ~~claim 1~~ claim 11 wherein the light hydrocarbon gas is natural gas.
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (currently amended) The method of ~~claim 7~~ claim 11 wherein the produced electrical power is placed on the power grid for the light hydrocarbon gas liquefaction process.
9. (currently amended) The method of ~~claim 1~~ claim 11 wherein all of the refrigerant compressors are driven by electric motors.
10. (canceled)

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11. An improved efficiency, reduced carbon dioxide emissions method for providing power for refrigerant compression and shared electrical power for a light hydrocarbon gas liquefaction process, the method consisting essential of:

- a) providing at least a portion of electrical power for the light hydrocarbon gas liquefaction process from at least one electrical generator driven by at least one fossil fuel fired turbine, fueled by a compressed air stream and a light hydrocarbon gas stream and producing a high-temperature, high-pressure gas stream to power the turbine and discharge a high-temperature exhaust gas stream;
- b) passing the high-temperature exhaust gas stream to heat exchange with water or low-pressure steam to produce a high-pressure steam stream;
- c) passing the high-pressure steam stream to a steam turbine to drive a second electrical generator to produce electrical power; and,
- b) d) compressing a low-pressure refrigerant to an increased pressure in at least one refrigerant compressor driven by an electric motor powered by electrical power generated by the at least one electrical generator or the second electrical generator.

12. (canceled)

13. (currently amended) An improved efficiency, reduced carbon dioxide emissions system for providing refrigerant compression and shared electrical power for a light hydrocarbon gas liquefaction process, the system comprising:

- a) at least one electrical generator driven by a fossil fuel fired turbine fueled by a compressed air stream and a light hydrocarbon gas stream and producing a high-temperature, high-pressure stream to power the turbine and discharge a high-temperature, low-pressure exhaust gas stream and operable to provide an electrical power supply for the light hydrocarbon gas liquefaction process; and,

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b) passing the high-temperature exhaust gas stream to heat exchange with water or low-pressure steam to produce a high-pressure steam stream;

c) passing the high-pressure steam stream to a steam turbine to drive a second electrical generator to produce electrical power; and,

b) d) a low-pressure refrigerant compressor driven by an electrical motor in electrical communication with the electrical power supply for the light hydrocarbon gas liquefaction process and powered by electrical power from the electrical power supply.

14. (original) The system of claim 13 wherein the at least one electrical generator produces substantially all of the electrical power required for the light hydrocarbon liquefaction process.

15. (original) The system of claim 13 wherein the system includes a plurality of electrical generators.

16. (original) The system of claim 13 wherein the system includes a plurality of turbines.

17. (original) The system of claim 13 wherein each turbine includes a high-pressure air inlet into a combustion zone from which a high-temperature, high-pressure combustion gas stream is passed to an inlet to the turbine to drive the turbine and produce a high-temperature, low-pressure exhaust gas stream discharged through an exhaust gas outlet from the turbine.

18. (canceled)

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19. (currently amended) The system of ~~claim 18~~ claim 17 wherein the system includes a heat exchanger in fluid communication with the exhaust gas outlet, the heat exchanger including an exhaust gas inlet and an exhaust gas outlet and a water or low-pressure steam inlet and a higher pressure steam outlet.

20. (currently amended) The system of claim 19 wherein the system includes ~~an energy recovery~~ a second electrical generator, operable to produce electrical power for the light hydrocarbon liquefaction process, and driven by a steam turbine having a higher pressure steam inlet and a low-pressure steam outlet.

21. (original) The system of claim 20 wherein the steam turbine includes a reduced temperature steam outlet in fluid communication with the low-pressure steam inlet to the heat exchanger.

22. (canceled)

23. (canceled)

24. (canceled)

25. (new) The method of claim 11 wherein the high-pressure steam stream is at a pressure from about 400 to about 1200 psi.